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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/633,826	08/04/2003	Tatsuhiko Kiuchi	WAKAB70.002AUS	5265

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EXAMINER

RIDLEY, BASIA ANNA

ART UNIT PAPER NUMBER

1764

DATE MAILED: 08/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/633,826

Applicant(s)

KIUCHI ET AL.

Examiner

Basia Ridley

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 August 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 080403.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

2. The Provisional U.S. Patent Applications 60/100,460 cited in the information disclosure statement filed on 4 August 2003 has been considered, but will not be printed on any patent resulting from this application.

Drawings

3. Figure 4 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated (see specification P3/L11-13 and P8/L8). See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.121(d)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

4. Claims 5-8 are objected to because of the following informalities:
 - in claim 5, lines 6-7, recitation "wherein the oxidizing agent flowing direction into a reaction and the carbon-containing raw material flowing direction" should be replaced with --wherein the oxidizing agent flowing direction and the carbon-containing raw material flowing direction--;

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- in claim 6, lines 1-2, recitation “wherein the oxidizing agent flowing direction into a reaction and the carbon-containing raw material flowing direction” should be replaced with --wherein the oxidizing agent flowing direction and the carbon-containing raw material flowing direction--.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-2 and 4 are rejected under 35 U.S.C. 102(b) as being anticipated by Kosaka et al. (USP 4,059,415).

Regarding claims 1-2 and 4, Kosaka et al., in Fig. 1, discloses reformer for obtaining a synthesis gas comprising:

- a reactor vessel (10);
- an oxidizing agent feed pipe (40) for feeding an oxidizing agent into the vessel;
- a carbon-containing raw material feed pipe (50) for feeding the carbon-containing raw material into the vessel; wherein
- the central axis of the oxidizing agent feed pipe (40) and the central axis of the carbon-containing raw material feed pipe (50) intersect with each other downstream of the outlet of the oxidizing agent feed pipe (40) in an oxidizing agent flowing direction and downstream of the outlet of the carbon-containing raw material feed pipe (50) in a carbon-containing raw material flowing direction (Fig. 2);

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- the central axis of the oxidizing agent feed pipe (40) and the central axis of the carbon-containing raw material feed pipe (50) intersect with each other at an angle of 80 to 100° (Fig. 1); and
- the cross section of the outlet of the oxidizing agent feed pipe (40) has a circular, oval, polygonal, starry or petal shape (Fig. 2).

Regarding limitations recited in claims 1-2 and 4 which are directed to a manner of operating disclosed reformer, the examiner notes that neither the manner of operating a disclosed device nor material or article worked upon further limit an apparatus claim. Said limitations do not differentiate apparatus claims from prior art. See MPEP § 2114 and 2115. Further, the examiner notes that process limitations do not have patentable weight in an apparatus claim. See *Ex parte Thibault*, 164 USPQ 666, 667 (Bd. App. 1969) that states “Expressions relating the apparatus to contents thereof and to an intended operation are of no significance in determining patentability of the apparatus claim.”

7. Claims 5-6 are rejected under 35 U.S.C. 102(b) as being anticipated by Heck et al. (USP 4,844,837).

Regarding claim 5-6, Heck et al., in Fig. 2, discloses a method for obtaining a synthesis gas comprising:

- feeding an oxidizing agent (16) in an oxidizing agent flowing direction into a reaction vessel (24);
- feeding a carbon-containing raw material (10) in a carbon-containing raw material flowing direction into the vessel (24) to partially oxidize the carbon-containing raw material (24a);
- wherein the oxidizing agent flowing direction and the carbon-containing raw material

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flowing direction intersect with each other to contact the oxidizing agent and the carbon-containing raw material upstream of the vessel (Fig. 2); and

- steam reforming the oxidized raw material in the vessel (24b).
- the oxidizing agent flowing direction (16) and the carbon-containing raw material flowing direction (10) intersect with each other at an angle of 80 to 100° (Fig. 2).

Claim Rejections - 35 USC § 102 and 35 USC § 103

8. The text of those sections of Title 35, U.S. Code not included in this section can be found in the prior section of this Office action.

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claim 8 is rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Heck et al. (USP 4,844,837).

Regarding claim 8, Heck et al., in Fig. 2, discloses all of the claim limitations as set forth above. Additionally the reference discloses the reformer wherein the cross section of the outlet of the oxidizing agent feed pipe appears to be the same as, or an obvious variant of the cross section of the outlet of the oxidizing agent feed pipe having a circular, oval, polygonal, starry or petal shape as recited in claim 8.

Claim Rejections - 35 USC § 103

11. The text of those sections of Title 35, U.S. Code not included in this section can be found in the prior section of this Office action.

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12. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kosaka et al. (USP 4,059,415).

Regarding claim 3, Kosaka et al. disclose(s) all of the claims limitations as set forth above, but the reference does not explicitly disclose any specific value for the distance from the outlet-end of the oxidizing agent feed pipe to an intersection point where the central axis of the oxidizing agent feed pipe and the central axis of the carbon-containing raw material feed pipe intersect with each other. The specific dimensions of the reformer are not considered to confer patentability to the claims. As the reformer operation efficiency and cost of construction are variable(s) that can be modified by adjusting reformer dimensions, the reformer dimensions would have been considered a result effective variable by one having ordinary skill in the art at the time the invention was made. As such, without showing unexpected results, the dimensions cannot be considered critical. Accordingly, one of ordinary skill in the art at the time the invention was made would have optimized, by routine experimentation, the reformer dimensions in the reformer of Kosaka et al. to obtain the desired operation efficiency and cost of construction (*In re Boesch*, 617 F.2d. 272, 205 USPQ 215 (CCPA 1980)), since it has been held that where the general conditions of the claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. (operation efficiency and cost of construction, 105 USPQ 223). Further the examiner notes that, it would have been obvious to change the reformer dimensions, since such modifications would have involved a mere change in the size of a component. A change in size is generally recognized as being within the level of ordinary skill in the art. *In re Rose*, 220 F.2d 459, 105 USPQ 237 (CCPA 1955).

Regarding limitations recited in claim 3 which are directed to a manner of operating

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disclosed reformer, the examiner notes that neither the manner of operating a disclosed device nor material or article worked upon further limit an apparatus claim. Said limitations do not differentiate apparatus claims from prior art. See MPEP § 2114 and 2115. Further, the examiner notes that process limitations, such as reactant velocities, do not have patentable weight in an apparatus claim. See *Ex parte Thibault*, 164 USPQ 666, 667 (Bd. App. 1969) that states “Expressions relating the apparatus to contents thereof and to an intended operation are of no significance in determining patentability of the apparatus claim.”

13. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Heck et al. (USP 4,844,837).

Regarding claim 7, Heck et al. disclose(s) all of the claims limitations as set forth above, but the reference does not explicitly disclose any specific value for the distance from the outlet-end of the oxidizing agent feed pipe to an intersection point where the central axis of the oxidizing agent feed pipe and the central axis of the carbon-containing raw material feed pipe intersect with each other or any specific reactant velocities. The specific dimensions of the reformer or reactant velocities are not considered to confer patentability to the claims. As the reformer operation efficiency and cost of construction and operation are variable(s) that can be modified by adjusting reformer dimensions and reactant flowrates, the reformer dimensions and reactant flowrates would have been considered a result effective variable by one having ordinary skill in the art at the time the invention was made. As such, without showing unexpected results, the dimensions or flowrates cannot be considered critical. Accordingly, one of ordinary skill in the art at the time the invention was made would have optimized, by routine experimentation, the reformer dimensions and reactant flowrates in the reformer of Heck et al. to obtain the desired

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operation efficiency and cost of construction and operation (*In re Boesch*, 617 F.2d. 272, 205 USPQ 215 (CCPA 1980)), since it has been held that where the general conditions of the claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. (operation efficiency and cost of construction, 105 USPQ 223). Further the examiner notes that, it would have been obvious to change the reformer dimensions, since such modifications would have involved a mere change in the size of a component. A change in size is generally recognized as being within the level of ordinary skill in the art. *In re Rose*, 220 F.2d 459, 105 USPQ 237 (CCPA 1955).

14. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Conclusion

15. In view of the foregoing, none of the claims are allowed.

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to examiner Basia Ridley, whose telephone number is (571) 272-1453.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola, can be reached on (571) 272-1444.

The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

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Technical Center 1700 General Information Telephone No. is (571) 272-1700. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Questions on access to the Private PAIR system should be directed to the Electronic Business Center (EBC) at (866) 217-9197 (toll-free).



Basia Ridley
Examiner
Art Unit 1764

BR

August 22, 2004